

EXTENSION OF FATIGUE LIFE FOR C4 SOLDER BALL TO CHIP CONNECTION

Abstract of the Disclosure

5 A method and structure for coupling a semiconductor substrate (e.g., a semiconductor
chip) to an organic substrate (e.g., a chip carrier). The coupling interfaces a solder member (e.g.,
a solder ball) to both a conductive pad on the semiconductor substrate and a conductive pad on
the organic substrate. Thermal strains on the solder member during thermal cycling may be
reduced by having a surface area of the pad on the semiconductor substrate exceed a surface area
of the pad on the organic substrate. Thermal strains on the solder member during thermal
cycling may also be reduced by having a distance from a centerline of the solder member to a
closest lateral edge of the semiconductor substrate exceed about 0.25 mm.